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IS 3901 (1975): Ziram Water Dispersible Powder [FAD 1: Pesticides and Pesticides Residue Analysis]



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IS : 3901 - 1975

REAFFIRMED

2002

*Indian Standard*  
SPECIFICATION FOR  
ZIRAM WATER DISPERSIBLE POWDER

*(First Revision)*

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# Indian Standard

## SPECIFICATION FOR ZIRAM WATER DISPERSIBLE POWDER (First Revision)

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AMENDMENT NO. 1 JUNE 1988  
TO  
IS:3901-1975 SPECIFICATION FOR ZIRAM WATER  
DISPERSIBLE POWDER

*(First Revision)*

(Page 4, Table 1)-- Add the following Note at the end of the table:

'Note - The material shall not be subjected to accelerated storage treatment if it has crossed half of its shelf life as ascertained from its date of manufacture and date of expiry declared on the container.'

(AFCD 6)

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Reprography Unit, BIS, New Delhi, India

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**AMENDMENT NO. 2    MARCH 2002**  
**TO**  
**IS 3901 : 1975    SPECIFICATION FOR ZIRAM WATER**  
**DISPERSIBLE POWDER**

*( First Revision )*

[ *Page 4, Table 1* ]:

- a) *Sl No. (ii), col 2* — Delete the words 'after accelerated storage'.
- b) *Sl No. (iii), col 2* — Delete the words 'after accelerated storage'.

( FAD 1 )

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Reprography Unit, BIS, New Delhi, India

***Indian Standard***  
**SPECIFICATION FOR**  
**ZIRAM WATER DISPERSIBLE POWDER**  
**( *First Revision* )**

**0. FOREWORD**

**0.1** This Indian Standard ( First Revision ) was adopted by the Indian Standards Institution on 28 January 1975, after the draft finalized by the Pest Control Sectional Committee had been approved by the Agricultural and Food Products Division Council and the Chemical Division Council.

**0.2** This standard was first issued in 1966. As this standard was issued quite some time ago, it was considered desirable to issue a revised version of the standard in order to make it up-to-date. An alternative method for the determination of ziram content based on the estimation of dimethylamine has been included in this revised version in addition to carbon disulphide method in order to align with the standards prepared for other dithiocarbamates. This revision also incorporates two amendments issued in regard to sieving requirement and revised tolerance limits for applying on the declared nominal value of the active ingredient percent content.

**0.3** Ziram water dispersible powders are used for the control of many diseases of agricultural crops specially in the control of blast of paddy, tikka diseases of groundnut and damping-off of tobacco and also to cure zinc deficiency in citrus crops.

**0.4** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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**1. SCOPE**

**1.1** This standard prescribes the requirements and the methods of sampling and test for ziram water dispersible powder concentrates containing varying percentages of ziram, technical.

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\*Rules for rounding off numerical values ( revised ).

**IS : 3901 - 1973**

**2. REQUIREMENTS**

**2.1 Description** — The material shall be in the form of a homogeneous powder, white to off-white in colour and shall wet readily on mixing with water, providing a suspension suitable for use as a spray.

**2.1.1** Ziram, technical, employed in the manufacture of this material shall conform to IS : 3900-1975\*.

**2.2** The material shall comply with the requirements given in Table 1.

**TABLE 1 REQUIREMENTS FOR ZIRAM WATER DISPERSIBLE POWDER CONCENTRATES**

Sl. No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST, REF TO	
			Appendix of IS : 3900-1975*	Cl of IS : 6940-1973†
(1)	(2)	(3)	(4)	(5)
i)	Ziram content, percent by mass	Nominal value as declared on the container (see 2.2.1)	A	—
ii)	Sieving requirement, material passing through 45-micron IS Sieve‡, after accelerated storage, percent by mass, Min	98	—	11.1
iii)	Suspensibility, after accelerated storage, percent by mass, Min	50	—	11.2
iv)	Wettability	Within two minutes	—	11.4

\*Specification for ziram, technical (*first revision*).

†Methods of tests for pesticides and their formulations.

‡See IS : 460-1962 'Specification for test sieves (*revised*)', BS 350, ASTM 325, Tyler 325 have their apertures within the limits specified for the above IS Test Sieve and may, therefore, be used as 45-micron IS Sieve.

\*Specification for ziram, technical (*first revision*).

**2.2.1** The appropriate tolerances to be applied shall depend upon the declared percent-nominal value [ see Table 1, Sl No. (i), col (3) ] and they shall be as given below:

<i>Nominal Value, Percent</i>	<i>Tolerance Limit, Percent, of the Nominal Value</i>
Up to 10	+10 -5
Above 10 and up to 50	$\pm 5$
Above 50	+5 -3

**2.2.1.1** The actual value of the ziram content in the formulation shall be calculated to the second decimal place for rounding off the first decimal place before applying the tolerance as stipulated in 2.2.1.

### 3. PACKING AND MARKING

**3.1 Packing** — The material shall be packed in clean and dry containers made of mild steel, tinplate, fibre-board, or wood, with a polyethylene liner.

**3.2 Marking** — The containers shall be securely closed and shall bear legibly and indelibly the following information in addition to the provisions of the Rules under the Insecticides Act:

- a) Name of the material;
- b) Name of the manufacturer;
- c) Date of manufacture;
- d) Batch number;
- e) Net mass of contents;
- f) Nominal ziram content, percent by mass; and
- g) The minimum cautionary notice worded as under:

**'HAZARDOUS. KEEP AWAY FROM FOODSTUFF AND ANIMAL FEED. DO NOT USE THE CONTAINER FOR STORAGE OF FOODSTUFF AND ANIMAL FEED. WASH HANDS THOROUGHLY WITH SOAP AND PLENTY OF WATER AFTER HANDLING.'**

**3.2.1 The containers may also be marked with the ISI Certification Mark.**

**NOTE** — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

**4. SAMPLING**

**4.1** Representative samples of the material shall be drawn as prescribed in ' Indian Standard methods of sampling of pesticides and their formulations ( under preparation ) '.

**NOTE** — Till such time the standard under preparation is published, the matter shall be subject to agreement between the concerned parties.

**5. TESTS**

**5.1** Tests shall be carried out as prescribed in the appropriate appendix and clauses given in col 4 and 5 of Table 1. For estimating ziram content, begin the test with sufficient quantity of sample containing 0.3 g of ziram content.

**5.2 Quality of Reagents** — Unless specified otherwise, pure chemicals and distilled water ( *see* IS : 1070-1960\* ) shall be employed in tests.

**NOTE** — ' Pure chemicals ' shall mean chemicals that do not contain impurities which affect the results of analysis.

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\*Specification for water, distilled quality ( revised ).

# INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

## Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

## Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

## Derived Units

Quantity	Unit	Symbol	Conversion
Force	newton	N	1 N = 1 kg·m/s <sup>2</sup>
Energy	joule	J	1 J = 1 N·m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V·s
Flux density	tesla	T	1 T = 1 Wb/m <sup>2</sup>
Frequency	hertz	Hz	1 Hz = 1 c/s (s <sup>-1</sup> )
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m <sup>2</sup>

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